

WHAT IS CLAIMED IS:

1. A method for manufacturing an optical cable, comprising:  
preparing a metal tube in which an optical fiber is received;  
transferring the metal tube to a longitudinal direction thereof at a predetermined speed; and  
bending the metal tube so that the transferred metal tube forms a waved shape in an advancing direction thereof.
2. A method for manufacturing an optical cable according to claim 1,  
wherein the bending step includes passing the metal tube between a pair of rollers which are oppositely rotating,  
wherein, as the pair of rollers are rotating, a trajectory drawn by opposite points on the rollers is shaken in a direction perpendicular to the advancing direction of the metal tube so that the metal tube is bent to form a waved shape in the advancing direction.
3. A method for manufacturing an optical cable according to claim 1,  
wherein the bending step includes passing the metal tube through a first pair of rollers which are oppositely rotated, and through a second pair of rollers which are spaced apart from the first pair of rollers along the advancing direction and oppositely rotated,  
wherein trajectories drawn by opposite points of the first and second pairs of rollers are periodically shaken in a direction perpendicular to the advancing direction as the first and second pairs of rollers rotates so that the metal tube is bent in the advancing direction,  
wherein the first and second pairs of rollers have the same shaking period and are arranged to have a phase difference as much as a half period so that the first pair of rollers and the second pair of rollers are shaken to opposite directions.

4. A method for manufacturing an optical cable according to claim 1, further comprising the step of forming a sheath surrounding the metal tube which has been bent to form a waved shape in the bending step.

5. A method for manufacturing an optical cable according to claim 4, wherein the sheath has an appearance formed straightly along the longitudinal direction of the metal tube.

6. A method for manufacturing an optical cable according to claim 4, wherein the sheath has an appearance bent in a waved shape according to the shape of the metal tube.

7. An apparatus for manufacturing an optical cable, comprising:  
a first pair of rollers which are rotated oppositely so that a metal tube receiving an optical fiber therein is passed through the rollers in a longitudinal direction thereof,  
wherein, as the first pair of rollers are rotated, a trajectory drawn by opposite points on the first pair of rollers is shaken in a direction perpendicular to an advancing direction of the metal tube so that the metal tube passing through the first pair of rollers is bent to form a waved shape in the advancing direction.

8. An apparatus for manufacturing an optical cable according to claim 7, further comprising a second pair of rollers spaced apart from the first pair of rollers along the advancing direction of the metal tube so that the metal tube passing through the first pair of rollers is passed through the second pair of rollers which are rotated oppositely,  
wherein, as the second pair of rollers are rotated, a trajectory drawn by opposite

points on the second pair of rollers is periodically shaken in a direction perpendicular to the advancing direction of the metal tube,

wherein the second pair of rollers are arranged to have the same shaking period as the first pair of rollers and have a phase difference as much as a half period to the first pair of rollers so that the second pair of rollers is shaken in a direction opposite to the first pair of rollers.

9. An apparatus for manufacturing an optical cable according to claim 7, wherein the first pair of rollers are a pair of eccentric cams.

10. An apparatus for manufacturing an optical cable according to claim 7, wherein the first pair of rollers are rollers having toothed or star-like sections, engaged to each other.

11. An apparatus for manufacturing an optical cable according to claim 7, wherein the at least one of the first pair of rollers is an eccentric cam having a circular, oval or fan-shaped section, and the first pair of rollers are elastically biased oppositely with the use of an elastic means.

12. An apparatus for manufacturing an optical cable according to claim 7, wherein at least one of the first pair of rollers is a roller having a polygonal section, and the first pair of rollers are elastically biased oppositely with the use of an elastic means.

13. An optical cable comprising:  
a metal tube bent to have a waved shape along a longitudinal direction thereof; and  
at least one optical fiber received in the metal tube with forming a waved shape

according to the metal tube.

14. An optical cable according to claim 13, further comprising a sheath surrounding the metal tube,

wherein the sheath has an appearance formed straight along the longitudinal direction of the metal tube so that the optical fiber received in the metal tube has a length relatively longer than the sheath.

15. An optical cable according to claim 13, further comprising a sheath surrounding the metal tube,

wherein the sheath has an appearance bent to form a waved shape according to the shape of the metal tube.